



Energy and the Home



EPA's State and Local Climate Change Program helps build awareness, expertise, and capacity to address the risk of climate change at the state and local levels. The program provides guidance and technical information to help state and local agencies prepare inventories of greenhouse gas emissions, develop action plans to reduce emissions, and educate their constituents. By emphasizing the many economic and environmental benefits of greenhouse gas reductions, the program encourages state and local decisionmakers to implement voluntary measures to reduce their greenhouse gas emissions.

Energy-Efficient Homes

The 100 million homes in the United States account for approximately 20 percent of the nation's carbon dioxide emissions. New homes are built in the United States at the rate of 1.4 million per year. Clearly, efforts to improve home energy efficiency can play an important role in state strategies for reducing greenhouse gas emissions and other energy-related air pollution.

Although energy costs often are the second-highest expense for homeowners (after mortgage payments), many homebuyers may not even consider energy consumption when comparing prospective houses. Similarly, many homeowners are reluctant to invest in energy improvements. They may lack information and understanding, or they may not have money to pay for an upgrade.

States can help remove such barriers by encouraging the use of home energy rating systems and working with lenders on loan products that promote energy efficiency. These programs can raise homebuyers' energy awareness while creating incentives to purchase efficient homes or upgrade inefficient ones.

In addition to rating systems and loan products, homeowners can improve the energy efficiency in new and existing homes by purchasing ENERGY STAR® homes and appliances. The ENERGY STAR Home program promotes the construction of energy efficient homes and provides special loan products for homes that meet their 5 star rating. ENERGY STAR Appliances promotes the purchase of energy-efficient refrigerators, washing machines, and other household appliances.

Home Energy Rating Systems

A *home energy rating* is a standard measure of a home's energy efficiency, much like a mileage rating for a car. Ratings allow homebuyers to compare the energy efficiency of one house with another in order to estimate future utility bills.

Home energy ratings require inspections by professionals trained under a Home Energy Rating System (HERS). Based on the results, a home receives a "Star" rating from 1 (least efficient) to 5 (most efficient). The rating includes an estimate of the home's annual energy costs. Owners or prospective buyers can receive a list of cost-effective options to improve the home's energy rating and reduce energy costs.

Energy-Efficient Mortgages

Special financing opportunities are available for buyers of rated homes. Lenders may offer an energy improvement

BENEFITS OF HOME ENERGY RATING SYSTEMS AND ENERGY-EFFICIENT MORTGAGES

- More disposable income for homeowners.
- Higher property values for energy-efficient homes.
- Increased local employment opportunities in construction and retrofit projects.
- Greater use of energy-efficient technologies and practices.
- Larger loans for lenders.
- Reduced need for electricity generation.
- Reduced emissions of greenhouse gases and other pollutants such as nitrogen oxides.

mortgage that allows a homeowner to finance a cost-effective upgrade to a higher rating by rolling the cost of improvements into the mortgage. These loans are available nationally through the Federal Housing Administration and are offered in several states on a pilot basis by private lenders for conventional loans. Energy-efficient mortgages are available nationally, but very few lenders are aware of them. Education of both lenders and borrowers remains a critical step for increasing demand.

Buyers of efficient homes may be eligible for an *energy-efficient mortgage*, which allows them to qualify for a larger loan on their prospective house or for a more expensive house than they could otherwise afford. Lenders understand that lower energy bills will offset the cost of higher monthly mortgage payments. Homes that meet the highest rating may be eligible for ENERGY STAR mortgages from participating lenders, offering favorable interest rates, discounts on closing costs, and other incentives.

Together, energy ratings and energy efficiency loan products can achieve significant cost savings and environmental benefits. One California family that financed an upgrade through an energy improvement mortgage reduced its annual utility bills by \$580. The total added to the mortgage to finance the improvements was \$276 per year, meaning a total net annual savings of \$304. In Vermont, the state's home energy rating organization calculates that upgrading a typical home to 4 Stars prevents nearly 7,300 pounds of carbon dioxide from being released to the atmosphere.

A recent EPA-funded study determined that energy-efficient homes have a higher market or resale value regardless of how long the home is owned. Home value increases \$20 for every \$1 reduction in average annual utility bill. A typical ENERGY STAR home reduces utility bills \$420 per year, adding \$8,400 to the market value of the home on average.

The Federal Role

The U.S. Department of Energy supports state efforts to create home energy rating systems, and the U.S. Environmental Protection Agency provides support through the Residential Energy Services Network and the National Home Energy Rating Systems Council. The council, a nonprofit industry group, has developed national home energy rating guidelines.

The Federal Housing Administration has offered energy-efficient mortgages nationwide since October 1995. Fannie Mae, Freddie Mac, and the Veteran's Administration also offer energy efficiency loan products.

The EPA/DOE ENERGY STAR Homes Program created special loan products for homes that meet the 5 Star rating. A growing number of leading mortgage lenders offer ENERGY STAR mortgages, which feature combinations of incentives such as discounted interest rates and closing costs.

State Experiences with Ratings Systems and Energy Mortgages

Currently, more than half the states have their own home energy rating systems, although many are either inactive, recently established, or conducting very few ratings. Active states include California, Colorado, Florida, Indiana, Utah, Vermont, and Virginia. A future challenge will be to sustain the program following the end of the pilot phase, which currently is supported by the federal government.

Vermont

Energy Rated Homes of Vermont (ERH-VT) is a project of the Vermont Energy Investment Corporation, a private nonprofit based in Burlington. The program has rated a total of 3,900 homes for energy efficiency and works with lenders, builders, real estate professionals, homebuyers, sellers, and utilities to promote affordable energy-efficient housing statewide.

ERH-VT guarantees future heating bills for people who buy a home with a rating of 4 Stars or better, or who upgrade an existing home through ERH-VT's energy improvement mortgage service. ERH-VT also is spearheading the Northeast Home Energy Rating System Alliance, which supports HERS programs, provides training, and attracts lenders.

Virginia

Virginia Home Energy Rating Organization, Inc. (Virginia HERO), an independent nonprofit, was honored by the state legislature for rating more than 18,000 homes. Virginia HERO estimates that more than 90 percent of its ratings were used to obtain energy mortgages. The organization works with lenders, builders, and realtors.

For More Information

The *Home Energy Rating Systems Council* links home energy rating programs with financing for energy-efficiency improvements. Supported with EPA funds.

Tel: 202-638-3700

Website: <http://hers-council.org/>

The Residential Energy Services Network is a network of mortgage lenders, utilities, and other housing and residential energy efficiency professionals. Supported with EPA funds.

Tel: 760-806-3448

Website: <http://www.natresnet.org/>

The *National Home Energy and Resources Organization* offers products and services such as training and marketing support to promote home energy ratings nationwide.

Tel: 800-373-2416

Website: <http://www.national-hero.com/>

Energy Rated Homes of America is a national nonprofit association that represents the rating industry.

Tel: 317-638-4232

Email: mjansen@incap.org

EPA/DOE ENERGY STAR Homes Program provides special loan products for homes that meet the 5 Star rating.

Tel: 888-782-7937

Website: <http://yosemite.epa.gov/appd/eshomes/eshomes.nsf>

EPA/DOE ENERGY STAR Appliances program promotes the purchase of energy efficient appliances such as refrigerators, washing machines, dishwashers, and room air conditioners.

Tel: 888-STAR-YES

Website: <http://www.energystar.gov/products/appliances.html>

EPA's *State and Local Climate Change Program* helps states and communities reduce emissions of greenhouse gases in a cost-effective manner while they address other environmental problems.

Website: <http://www.epa.gov/globalwarming/> and click on

"Public Decision Makers" under the "Visitors Center."